

## Andrew R. Judge, Ph.D.

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### **EDUCATION**

- 1999 – 2003 University of Florida, Gainesville, FL  
*Ph.D. Exercise Physiology*  
*Advisor: Stephen Dodd, Ph.D.*
- 1997 – 1999 McNeese State University, Lake Charles, LA  
*M.Ed. Exercise Physiology*  
*Advisor: Robert Voight, Ph.D.*
- 1993 – 1996 Loughborough University, Leicestershire, England  
*B.S.*

### **POSTDOCTORAL TRAINING**

- 2004 – 2006 Boston University, Boston, MA  
*Postdoctoral Fellow, Muscle Biology*  
*Advisor: Susan Kandarian, Ph.D.*

### **PROFESSIONAL EXPERIENCE**

- 2015 – Present Associate Director for Training, Myology Institute,  
University of Florida, Gainesville, FL
- 2014 – Present Associate Professor, Department of Physical Therapy  
Affiliate, Department of Physiology & Functional Genomics  
University of Florida, Gainesville, FL
- 2009 – 2014 Assistant Professor, Department of Physical Therapy  
Affiliate, Department of Physiology & Functional Genomics  
University of Florida, Gainesville, FL
- 2007 (Jan) - 2009 Research Assistant Professor  
Department of Applied Physiology and Kinesiology  
University of Florida, Gainesville, FL



The V Foundation 11/1/2015 – 10/31/2017  
 “The Role of Cachexia in Pancreatic Cancer”  
 Total costs: \$200,000  
 Total direct costs: \$200,000  
 Role: *co-investigator (3%)*  
 Principal investigator: *Jose Trevino*

U54AR052646 8/1/2015 – 7/31/2020  
 NIH, NIAMS  
 “Failed regeneration in the muscular dystrophies: inflammation, fibrosis and fat”  
 Total costs: \$7,671,546  
 Total direct costs: \$6,128,698  
 Role: *Training Core Co-Director (10%)*  
 Principal Investigator: *Lee Sweeney*

R21CA194118 4/1/2015 – 3/31/2018  
 NIH, NCI  
 “Dysregulation of sarcomere stabilizing proteins cause muscle atrophy and weakness during cancer cachexia”  
 Total costs: \$360,000  
 Total direct costs: \$240,000  
 Role: *Principal Investigator (20%)*

R01AR064189 4/1/2013 – 3/31/2018  
 NIH/NIAMS  
 “Mechanisms of exercise protection in ventilator-induced diaphragm dysfunction”  
 Total costs: \$1,856,802  
 Total direct costs: \$1,239,933  
 Role: *co-investigator (5%)*  
 Principal Investigator: *Scott Powers*

1R01AR060209-01A1 8/1/2011-5/31/2017  
 NIH, NIAMS  
 “FoxO signaling and skeletal muscle atrophy”  
 Total costs: \$1,801,540  
 Total direct costs: \$1,250,000  
 Role: *Principal Investigator (40%)*

**Past Support:**  
 1R21AR063805-01 9/12/2012-8/31/2014  
 NIH/NIAMS  
 “Ventilator-induced diaphragmatic atrophy: Role of FoxO signaling”  
 Total costs: \$600,975  
 Total direct costs: \$402,750  
 Role: *co-investigator (5%)*  
 Principal Investigator: *Scott Powers*

1R03AR056418-01A1 3/1/2009-2/28-2012

NIH, NIAMS

“The role of heat shock proteins in skeletal muscle disuse atrophy”

Total costs: \$219,750

Total direct costs: \$150,000

Role: *Principal Investigator (20%)*

09BN-09 7/1/2009-6/30/2012

Bankhead-Coley Cancer Research Program

“Role of NF kappa B and FoxO in the regulation of muscle atrophy genes and muscle atrophy during experimental cancer cachexia”

Total costs: \$375,000

Total direct costs: \$347,222

Role: *Principal Investigator (20%)*

08-KN-07 7/1/2008-12/31/2011

James and Esther King Biomedical Research Program

“Cytokine-induced muscle atrophy following exercise claudication”

Total costs: \$373,122

Total direct costs: \$345,483

Role: *Principal Investigator (20%)*

UF Pepper Institute 4/1/2009-3/31/2011

"The role of heat shock protein 70 overexpression on the recovery of muscle mass and function following cast immobilization in old rats"

Total direct costs: \$46,616

Role: *Principal Investigator (5%)*

National Space & Biomedical Research 12/1/2004-9/30/2006

Institute (NSBRI) Post-doctoral Fellowship (PF00501) (100%),

“The use of aspirin and other NSAIDS to ameliorate muscle atrophy due to simulated weightlessness”

**Pending Support:**

R01AR060209-06 12/1/2017-11/30/2022

NIH, NIAMS

“Fox signaling and skeletal muscle atrophy”

Total costs: \$2,539,253

Total direct costs: \$1,654,719

Role: *Principal Investigator (35%)*

Previous submission: 15%

**PEER REVIEWED PUBLICATIONS (48 TOTAL, 21 AS SENIOR AUTHOR)**

Underlined – senior author

\* - PhD student mentored by ARJ

† - Post-doc mentored by ARJ

Go KL, Delitto D, Judge SM, Gerber MH, George TJ, Behrns KE, Hughes SJ, **Judge AR** and Trevino JG. Orthotopic Patient-Derived Pancreatic Cancer Xenografts Engraft Into the Pancreatic Parenchyma, Metastasize and Induce Muscle Wasting to Recapitulate the Human Disease. *Pancreas*. Apr, 2017

Ahn B, Coblenz P, Beharry AW\*, Patel N, **Judge AR**, Moylan JS, Hoopes CW, Bonnell MR and Ferreira LF. Diaphragm abnormalities in patients with end-stage heart failure: NADPH oxidase upregulation and protein oxidation. *Front. Physiol.* Jan 9;7:686, 2017.

Delitto D, Judge SM, George TJ, Wallet SM, Sarosi GA, Thomas RM, Behrns KE, Hughes SJ, **Judge AR** and Trevino JG. A Clinically Applicable Muscular Index Predicts Long-term Survival in Resectable Pancreatic Cancer. *Surgery*. Apr;161(4):930-938, 2017.

#Delitto D, #Judge SM, Knowlton AE, Nosacka RL\*, Rocha FB, DiVita BB, George TJ, Behrns KE, Hughes SJ, Wallet SM, **Judge AR** and Trevino JG. Human pancreatic cancer xenografts recapitulate key aspects of cancer cachexia. *Oncotarget*. Jan 3;8(1):1177-1189, 2017. #Authors contributed equally to this work

Smith IJ, Roberts B\*, Beharry A\*, Godinez GL, Payan DG, Kinsella TM, **Judge AR** and Ferreira LF. Janus Kinase inhibition prevents cancer- and myocardial infarction-mediated diaphragm muscle weakness in mice. *Am J Physiol Regul Integr Comp Physiol*. Apr 15;310(8):R707-10, 2016.

Gonzalez-Rothi EJ, Armstrong GT, Cerreta AJ, Fitzpatrick GM, Reier PJ, Lane MA, **Judge AR**, Fuller DD. Forelimb muscle plasticity following unilateral cervical spinal cord injury. *Muscle and Nerve*. Dec 10, 2015

Beharry AW\* and **Judge AR**. Differential expression of *HDAC* and *HAT* genes in atrophying skeletal muscle. *Muscle and Nerve*. Sep 15, 2015

Ryder DJ<sup>†</sup>, Judge SM, Beharry AW\*, Farnsworth CL, Silva JC and **Judge AR**. Identification of the Acetylation and Ubiquitin-Modified Proteome during the Progression of Skeletal Muscle Atrophy. *PLoS ONE*. Aug 24;10(8), 2015

Ahn B, Beharry AW\*, Frye GS, **Judge AR**, Ferreira LF. NAD(P)H oxidase subunit p47phox is elevated, and p47phox knockout prevents diaphragm contractile dysfunction in heart failure. *Am J Physiol Lung Cell Mol Physiol*. Sep 1;309(5):L497-505, 2015

Judge SM, Wu CL, Beharry AW\*, Roberts BM\*, Ferreira LF, Kandarian SC and **Judge AR**. Genome-wide identification of FoxO-dependent gene networks in skeletal muscle during C26 cancer cachexia. *BMC Cancer*. Dec 24;14:997, 2014.

Reid MB, **Judge AR** and Bodine SC. CrossTalk opposing view: The dominant mechanism causing disuse muscle atrophy is proteolysis. *J Physiol*. 15 December; 592 (24), 2014.

Ye F, McCoy SC, Ross HH, Bernardo JA, Beharry AW\*, Senf SM<sup>†</sup>, **Judge AR**, Beck DT, Conover CF, Cannady DF, Smith BK, Yarrow JF, Borst SE. Transcriptional regulation of myotrophic actions by testosterone and trenbolone on androgen-responsive muscle. *Steroids*. Jun 10;87C:59-66, 2014.

Beharry AW\*, Sandesara PB, Roberts BM\*, Ferreira LF, Senf SM<sup>†</sup>, and **Judge AR**. HDAC1 activates FoxO and is both sufficient and required for skeletal muscle atrophy. *J Cell Sci*. Apr 1;127(Pt 7):1441-53, 2014

Gill LC, Ross HH, Lee KZ, Gonzalez-Rothi EJ, Dougherty BJ, **Judge AR**, Fuller DD. Rapid diaphragm atrophy following cervical spinal cord hemisection. *Respir Physiol Neurobiol*. Feb 1;192:66-73 2014.

Roberts BM\*, Frye GS, Ahn B, Ferreira LF and **Judge AR**. Cancer cachexia decreases specific force and accelerates fatigue in limb muscle. *Biochem Biophys Res Commun*. Jun 7;435(3):488-92, 2013

Welc SS, **Judge AR** and Clanton TL. Skeletal muscle interleukin-6 regulation in hyperthermia. *Am J Physiol. Cell Physiol*. Aug 15;305(4):C406-13, 2013

Senf SM<sup>†</sup>, Howard TM, Ahn B, Ferreira LF and **Judge AR**. Loss of the inducible Hsp70 delays the inflammatory response to skeletal muscle injury and severely impairs muscle regeneration. *PLoS ONE*. Apr 23;8(4), 2013

Diaphragm atrophy and contractile dysfunction in a murine model of pulmonary hypertension. Ahn B, Empinado HM, Al-Rajhi M, **Judge AR**, Ferreira LF. *PLoS ONE*. Apr 22;8(4), 2013

Roberts BM\*, Ahn B, Smuder AJ, Al-Rajhi M, Gill LC, Beharry AW\*, Powers SK, Fuller DD, Ferreira LF, **Judge AR**. Diaphragm and ventilatory dysfunction during cancer cachexia. *The FASEB J*. Jul;27(7):2600-10, 2013

**Judge AR**, Powers SK, Ferreira LF and Bamman MM. Meeting Synopsis: Advances in Skeletal Muscle Biology in Health and Disease Gainesville, Florida February 22nd to 24th 2012 Day 2: "Muscle diseases and regeneration" and "Clinical/translational research". *Frontiers in Physiology*. May, 2012 (Invited Meeting synopsis)

**Judge AR**, Powers SK, Ferreira LF and Bamman MM. Meeting Synopsis: Advances in Skeletal Muscle Biology in Health and Disease Gainesville, Florida February 22nd to 24th 2012 Day 2: "Muscle diseases and regeneration" and "Clinical/translational research". *Frontiers in Physiology*. May, 2012 (Invited Meeting synopsis)

Powers SK, Smuder AJ, **Judge AR**. Oxidative stress and disuse muscle atrophy: cause or consequence? *Curr Opin Clin Nutr Metab Care*. May; 15(3): 240–245, 2012 (Invited Review)

Falk DJ and **Judge AR**. Putting the spice in weaning. *Crit Care Med*. Mar;40(3):1022-3, 2012 (Invited Editorial)

Senf SM\* and **Judge AR**. Determination of gene promoter reporter activity in skeletal muscles in vivo. *Methods Mol Biol*. 798:461-472, 2012 (Invited Methods Paper)

Inhibition of FoxO transcriptional activity prevents muscle fiber atrophy during cachexia and induces hypertrophy. Reed SA<sup>†</sup>, Sandesara PB, Senf SM\* and **Judge AR**. *FASEB J*. Mar; 26(3):987-1000, 2012

Long-term perturbation of muscle iron homeostasis following hindlimb suspension in old rats is associated with high levels of oxidative stress and impaired recovery from atrophy. Xu J, Hwang JC, Lees HA, Wohlgemuth S, Knutson MD, **Judge AR**, Dupont-Versteegden E, Marzetti E and Leeuwenburgh L. *Exp Gerontol*, Jan 47(1):100-108, 2012

- p300 Acetyltransferase Activity Differentially Regulates the Localization and Activity of the FOXO Homologues in Skeletal Muscle. Senf SM\*, Sandesara PB, Reed SA<sup>†</sup>, and **Judge AR**. *Am J. Physiol. Cell Physiol.* Jun;300(6):C1490-501, 2011
- Reed SA<sup>†</sup>, Senf SM\*, Cornwell EW, Kandarian SC, **Judge AR**. Inhibition of I $\kappa$ B kinase alpha (IKK $\alpha$ ) or IKKbeta (IKK $\beta$ ) plus forkhead box O (Foxo) abolishes skeletal muscle atrophy. *Biochem Biophys Res Commun.* Feb 18;405(3):491-6, 2011
- Hain BA\*, Dodd SL and **Judge AR**. I $\kappa$ B $\alpha$  degradation is necessary for skeletal muscle atrophy associated with contractile claudication. *Am J Physiol: Regul Comp Physiol.* Mar;300(3):R595-604, 2011
- Buford TW, Anton SD, **Judge AR**, Marzetti E, Wohlgemuth SE, Carter CS, Leeuwenburgh C, Pahor M, Manini TM. Models of accelerated sarcopenia: Critical pieces for solving the puzzle of age-related muscle atrophy. *Ageing Res Rev.* Oct;9(4):369-83, 2010
- McClung JM, **Judge AR**, Powers SK, and Yan Z. p38 MAPK links oxidative stress to autophagy-related gene expression in cachectic muscle wasting. *Am J. Physiol. Cell Physiol.* Mar;298(3):C542-9, 2010
- Senf SM\*, Dodd SL and **Judge AR**. FOXO Signaling is Required for Disuse Muscle Atrophy and is Directly Regulated by Hsp70. *Am J. Physiol. Cell Physiol.* Jan;298(1):C38-45, 2010
- Dodd SL, Gagnon B, Senf SM\*, Hain BA\* and **Judge AR**. ROS-mediated activation of NF- $\kappa$ B and Foxo during muscle disuse. *Muscle & Nerve.* Jan;41(1):110-3, 2010
- Dodd SL, Hain BA\*, Senf SM\* and **Judge AR**. Hsp27 inhibits IKK $\beta$ -induced NF- $\kappa$ B activity and skeletal muscle atrophy. *FASEB J.* Oct;23(10):3415-23, 2009.
- McClung JM, **Judge AR**, Talbert EE, Powers SK. Calpain-1 is required for hydrogen Peroxide induced myotube atrophy. *Am J. Physiol. Cell Physiol.* Feb;296(2):C363-71, 2009
- Dodd SL, Hain BA\*, **Judge AR**. Hsp70 prevents disuse muscle atrophy in senescent rats. *Biogerontology.* Oct;10(5):605-11, 2009
- Senf SM\*, Dodd SL, McClung JM, **Judge AR**. Hsp70 overexpression inhibits NF- $\kappa$ B and Foxo3a transcriptional activities and prevents skeletal muscle atrophy. *FASEB J.* Nov;22(11):3836-45, 2008.
- Pickett A, O'Keeffe R, **Judge AR**, Dodd SL. The in vivo rat muscle force model is a reliable and clinically relevant test of consistency among botulinum toxin preparations. *Toxicon.* Sep 1;52(3):455-64, 2008
- Pipinos II, **Judge AR**, Selsby JT, Zhen Z, Swanson SA, Nella AA, Dodd SL. Basic science review: the myopathy of peripheral arterial occlusive disease: Part 2. Oxidative stress, neuropathy, and shift in muscle fiber type. *Vasc Endovascular Surg.* 42(2):101-12, 2008
- Judge AR**, Selsby JT, Dodd SL. Antioxidants attenuate oxidative damage in skeletal muscle during mild ischemia. *Exp Physiol.* 93(4):479-85, 2008

Pipinos, II, **Judge AR**, Selsby JT, Zhu Z, Swanson SA, Nella AA, Dodd SL. The myopathy of peripheral arterial occlusive disease. Part 1: Functional and Histomorphological Changes and Evidence for Mitochondrial Dysfunction. *Vasc Endovascular Surg.* 41(6): 481-489, 2008

Makris KJ, Nella AA, Zhu Z, Swanson SA, Casale GP, Gutti TL, **Judge AR**, Pipinos II. Mitochondriopathy of peripheral arterial disease. *Vascular.* 15(6):336-43, 2007

**Judge AR.**, Koncarevic A., Hunter R.B., Liou H.C., Jackman R., and Kandarian S.C. A role for I $\kappa$ B $\alpha$ , but not c-Rel, in skeletal muscle atrophy. *Am J. Physiol. Cell Physiol.* Aug 23, 2006

Pipinos II, **Judge AR**, Zhu Z, Selsby JT, Swanson SA, Johanning JM, Baxter BT, Lynch TG and Dodd SL. Mitochondrial Defects and Oxidative Damage in Patients with Peripheral Arterial Disease. *Free Radic Biol Med.* Jul 15;41(2):262-9, 2006

Dodd SL, Selsby JT, Payne TA, **Judge AR**, and Dott C. The effects of botulinum neurotoxin type A on skeletal muscle myosin heavy chain composition. *Toxicon.* 46(2):196-203, 2005

Selsby JT, **Judge AR**, Yimlamai T, Leeuwenburgh C, Dodd SL. Life-long calorie restriction increases heat shock proteins and proteasome activity in soleus muscles of Fisher 344 rats. *Experimental Gerontology.* 40: 37-42, 2005

Judge SP, **Judge AR**, Grune T, and Leeuwenburgh C. Short-term caloric restriction decreases cardiac mitochondrial oxidant production and antioxidant enzyme activities but increases protein carbonyl content. *Am J Physiol: Reg Physiol.* 286(2): R254-R259, 2004

**Judge AR** and Dodd SL. Xanthine oxidase and activated neutrophils cause oxidative damage to skeletal muscle following contractile-induced claudication. *American Journal of Physiology: Heart and Circulatory Physiology.* 286(1): H252-256, 2003

**Judge AR** and Dodd SL. Oxidative damage to skeletal muscle following an acute bout of contractile claudication. *Atherosclerosis.* 171(2): 219-224, 2003

### **POSTER PRESENTATIONS OF DATA FROM JUDGE LAB**

Underlined - ARJ

Graduate Student - (g)

Post-Doctoral Associate/Fellow - (p)

Other Lab Associate - (&)

#### **International**

Modeling Pancreatic Cancer Cachexia Using Mouse Avatars. Rachel L. Nosacka (g). Advances in Skeletal Muscle Biology in Health and Disease, Gainesville, FL, March 2017. *Poster presentation*

Parallel analysis of skeletal muscle from cachectic PDAC patients and their mouse avatars identifies novel transcriptional and proteomic signatures of cachexia with consistent fibrosis in PDAC patients. Rachel L. Nosacka (g). Cancer Cachexia Conference, Washington, DC, USA, September 2016. *Poster presentation*

Causative Role of MEF2C in Pre-Cachectic Downregulation of Muscle Structural Genes and Muscle Atrophy During Cancer Cachexia. Rachel L. Nosacka (g). Advances in Skeletal Muscle Biology in Health and Disease, Gainesville, FL, January 2016. *Poster presentation*



Causative role of MEF2c in pre-cachectic downregulation of muscle structural genes and muscle atrophy in tumor-bearing mice. AR Judge. 8<sup>th</sup> International Cachexia Conference, Paris, France, December 2015. *Poster and oral presentation*

Cachexia mediates alterations in the neuromuscular junction in a murine model of colorectal cancer. DJ Falk. 8<sup>th</sup> International Cachexia Conference, Paris, France, December 2015. *Poster and oral presentation*

Inhibition of FoxO prevents cancer induced diaphragm atrophy and inhibits cardiac pathology. AW Beharry (g). 2<sup>nd</sup> International cachexia conference, Montreal, Canada, September 2014. *Poster and oral presentation*

Cebpb is a novel FoxO target gene during cancer cachexia. BM Roberts (g). 2<sup>nd</sup> International cachexia conference, Montreal, Canada, September 2014. *Poster presentation*

Hsp70 is a damage-associated molecular pattern (DAMP) that is sufficient to induce cytokine and chemokine expression from skeletal muscle cells. Sarah M. Senf (g). Molecular Mechanisms of Muscle Growth and Wasting in Health and Disease Conference, Centro Stefano Franscini, Monte Verita-Ascona, Switzerland, September 2013. *Poster presentation*.

Skeletal Muscle-Derived Hsp70 is Necessary for the Inflammatory Response following Muscle Injury. Senf SM (g). Sixth International Symposium on Heat Shock Proteins in Biology and Medicine, Alexandria, Virginia, USA, November 2012. *Poster presentation*.

Hsp70 Activates the Skeletal Muscle Inflammatory Response Following Muscle Injury. SM Senf (p). Integrative Biology of Exercise, Westminster, Colorado, October 2012. *Poster presentation*

Skeletal muscle contractile dysfunction in C-26 tumor bearing mice. BM Roberts (g). Cancer Cachexia: Molecular Mechanisms and Therapeutic Approaches, Boston, MA. September 2012. *Poster presentation*

Diaphragm muscle fiber atrophy and contractile dysfunction, and ventilatory dysfunction in C-26 tumor bearing mice. AW Beharry (g). Cancer Cachexia: Molecular Mechanisms and Therapeutic Approaches, Boston, MA. September 2012. *Poster presentation*

Impaired muscle growth and regeneration in Hsp70 <sup>-/-</sup> mice. SM Senf (g). Advances in Skeletal Muscle Biology in Health and Disease, Gainesville, FL February 2012. *Poster presentation*

NF- $\kappa$ B binding and transcriptional changes in skeletal muscle of patients with Peripheral Arterial Disease. PB Sandesara (&). Advances in Skeletal Muscle Biology in Health and Disease, Gainesville, FL February 2012. *Poster presentation*

Hsp70 represses NF- $\kappa$ B-dependent signaling in skeletal muscle and is necessary for normal muscle growth. S.M. Senf (g). International Conference on Muscle Wasting. Ascona, Switzerland. September 2011. *Poster presentation*

Inhibition of Foxo transcriptional activity promotes hypertrophy and prevents muscle atrophy during cancer and sepsis. AR Judge. International Conference on Muscle Wasting. Ascona, Switzerland. September 2011. *Poster presentation*

NF- $\kappa$ B signaling and skeletal muscle fiber atrophy: a rodent model of exercise with restricted blood supply, and Peripheral Arterial Disease patients. Experimental Biology, Washington DC, April 2011. *Poster presentation*

Foxo signaling is required for muscle atrophy associated with sepsis. S.A. Reed (p). Integrative Physiology of Exercise, Miami Beach, FL. September 2010. *Poster presentation*

Foxo activity is required for the normal atrophy program during cancer induced cachexia. S.A. Reed (p). Integrative Physiology of Exercise, Miami Beach, FL. September 2010. *Poster presentation*

Pervanadate induces the expression of specific atrophy-related genes in C2C12 myotubes. P.B. Sandesara (&). Integrative Physiology of Exercise, Miami Beach, FL. September 2010. *Poster presentation*

p300 acetyltransferase activity is necessary and sufficient to repress FOXO in skeletal muscle. S.M. Senf (g). New directions in Biology and Disease of skeletal muscle, Ottawa, ON, Canada. May 2010. *Poster presentation*

Acetylation of Hsp70 and regulation of FOXO transactivation. S.M. Senf (g). 5<sup>th</sup> Cachexia Conference, Barcelona, Spain. December 2009. *Poster presentation*

Hsp70 Represses Disuse-Induced Acetylation and Modulates FOXO3a Protein-Protein Interactions in the Nucleus. S.M. Senf (g). Frontiers in Myogenesis and Skeletal Muscle Satellite and Stem Cells Conference, New York, NY, May 2009. *Poster presentation*

Common transcriptional changes in NF- $\kappa$ B signaling in skeletal muscle from Peripheral Arterial Disease patients and following repeated bouts of exercise claudication in a rat model. AR Judge. Frontiers in Myogenesis and Skeletal Muscle Satellite and Stem Cells Conference, New York, NY, May 2009. *Poster presentation*

Hsp70 associates with Foxo3a and inhibits Foxo3a-dependent transcription of atrogen-1 in skeletal muscle, in vivo. S.M. Senf (g). Integrative Biology of Exercise Conference, Hilton Head, SC. September 2008. *Poster presentation*

Hsp27 Overexpression is Sufficient to Inhibit NF- $\kappa$ B Activation During Skeletal Muscle Disuse. B.A. Hain (g). Integrative Biology of Exercise Conference, Hilton Head, SC. September 2008. *Poster presentation*

Overexpression of Hsp70 inhibits NF- $\kappa$ B activation and skeletal muscle atrophy. S.M. Senf (g). 4<sup>th</sup> Cachexia Conference, Tampa, FL. December 2007. *Poster presentation*

### **National**

Skeletal Muscle Pathology in Cachectic Cancer Patients. Rachel L. Nosacka (g). Association for Clinical and Translational Science Conference, Washington, DC, USA, April 2016. *Poster presentation*

### **Regional**

The effect of tumor burden on skeletal muscle during cancer cachexia. B Roberts (g). Southeastern American College of Sports Medicine, Jacksonville, FL. February 2012. *Poster presentation*

Exercise claudication-induced NF- $\kappa$ B activation is required for the associated skeletal muscle atrophy in a rodent model. B.A. Hain (g). Southeastern American College of Sports Medicine, Greenville, SC, February 2010. *Poster presentation*

### Local

Modeling Pancreatic Cancer Cachexia Using Mouse Avatars. Rachel L. Nosacka (g). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL, March 2017. *Poster presentation*

Cancer-Associated Muscle Pathology: The Role of MEF2c. Rachel L. Nosacka (g). Clinical and Translational Research Institute Research Day, University of Florida, Gainesville, FL, June 2016. *Poster presentation*

Identification of pre-cachectic downregulation of muscle structural genes during cancer cachexia and the causative role of MEF2C. Rachel L. Nosacka (g). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL, March 2016. *Poster presentation*

Downregulation of Muscle Structural Proteins during Cancer Cachexia: Mechanisms and Implications. Sarah M. Judge. Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL, March 2015. *Poster presentation*

FoxO signaling during cancer cachexia in skeletal muscle. BM Roberts (g). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2012. *Poster presentation*

Regenerative Deficits in Hsp70<sup>-/-</sup> Mice Following Muscle Injury are linked to Increased Pro-Inflammatory Signaling. SM Senf (g). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2012. *Poster presentation*

The role of p300 in the regulation of FOXO signaling as it relates to skeletal muscle disuse atrophy. S.M. Senf (g). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2010. *Poster presentation*

Role of Foxo signaling in muscle wasting due to sepsis. S.A. Reed (p). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2012. *Poster presentation*

Foxo activation is required for muscle fiber atrophy during cancer. P.B. Sandesara (&). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2012. *Poster presentation*

Hsp70 enhances skeletal muscle regrowth in old rats. B.A. Hain (g). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2012. *Poster presentation*

Repression of Foxo3a-induced transcription by Hsp70 does not require Foxo3a nuclear export. S.M. Senf (g). Understanding Muscle: From Development to Disease, Columbus, OH, April 2009. *Poster presentation*

Transcriptional regulation of skeletal muscle atrophy genes in a rat exercise claudication model: Role of NF- $\kappa$ B. B.A. Hain (g). Understanding Muscle: From Development to Disease, Columbus, OH, April 2009. *Poster presentation*

Overexpression of Hsp27 attenuates disuse skeletal muscle atrophy. B.A. Hain (g). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2008. *Poster presentation*

Hsp70 inhibits atrogen-1 transcription through specific modulation of Foxo3a signaling. S.M. Senf (g). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2008. *Poster presentation*

Catalase Overexpression is Sufficient to Inhibit Disuse-Induced NF- $\kappa$ B and Foxo Activity. B.J. Gagnon (&). Neuromuscular Plasticity Symposium, University of Florida, Gainesville, FL. March 2008. *Poster presentation*

### **LECTURES**

Investigating cellular processes that drive muscle wasting. 2017 Australian Physiological Society Conference. **Melbourne, Australia**. November, 2017. *Invited Talk*

Muscle pathology in pancreatic Cancer Cachexia. **West Virginia University** Cancer Institute, October 2017. *Invited Talk*

Foxo and Foxo regulation in the pathogenesis of muscle wasting. 9<sup>th</sup> International Conference on Cachexia, Sarcopenia and Muscle Wasting. **Berlin, Germany**. December 2016. *Invited talk*

Novel role of FoxO in initiating cancer-induced muscle pathology. 3<sup>rd</sup> International cachexia conference, **Washington D.C.**, September 2016. *Invited talk*

Intracellular Mechanisms of Skeletal Muscle Pathology in Cancer Cachexia. **University of Iowa** Fraternal Order of Eagles Diabetes Research Center, July 2016. *Invited talk*

Novel role of FoxO in initiating cancer-induced muscle pathology. **Indiana University** Simon Cancer Center Cachexia Working Group/IUPUI Center for Cachexia Research, Innovation and Therapy. **Indianapolis**, May 2016. *Invited talk*

Novel role of FoxO in initiating cancer-induced muscle pathology. **University of Nebraska Medical School**, February 2016. *Invited Talk*

Cancer-induced skeletal muscle pathology. Translational Research Institute for Metabolism and Diabetes, Florida Hospital, **Sanford/Burnham Institute, Orlando, FL**, Fall 2015. *Invited talk*

Cancer-induced skeletal muscle pathology. Department of Physiology & Functional Genomics, University of Florida, Fall 2015. *Invited talk*

Inhibition of FoxO prevents cancer induced diaphragm atrophy and inhibits cardiac pathology. 2<sup>nd</sup> International cachexia conference, **Montreal, Canada**, September 2014. *Selected Talk*

Novel gene networks and biological pathways regulated by FoxO in skeletal muscle during cancer cachexia. 13th International Congress on Neuromuscular Diseases, Nice, France, July 2014. *Selected Talk*

FoxO signaling in muscle during cancer cachexia. The Ohio State University. May 2014. *Invited talk*

Targeting FoxO transcription factors to counter muscle wasting during cancer. University of Louisville. May 2014. *Invited talk*

Identification of novel FoxO target genes. Advances in Skeletal Muscle Biology in Health and Disease Biennial Conference, University of Florida, Spring 2014. *Invited talk*

New insights into the regulation of FoxO signaling in skeletal muscle. International Conference on Muscle Wasting. **Ascona, Switzerland**. September 2013. *Invited talk*

Skeletal Muscle Regeneration: The Role of Hsp70. Department of Biomedical Engineering, University of Florida, Fall 2012. *Invited talk*

Muscle Wasting in Cancer Cachexia. University of Florida Shands Cancer Center. Spring 2012

Role of Hsp70 in muscle regeneration, Department of Applied Physiology, **University of Delaware**, Fall 2011. *Invited talk*

Angiogenesis, Arteriogenesis, and muscle function: contributions of animal models to understanding peripheral arterial disease. **Experimental Biology, Washington DC**, April 2011. *Selected talk*

Regulation of skeletal muscle atrophy. **Southeast Chapter of the American College of Sports Medicine, Greenville, SC**, February 2011. *Symposium*

Regulation of FOXO signaling during skeletal muscle atrophy, Muscle Biology/Physiology seminar series, University of Florida, Spring 2010. *Invited talk*

The role of heat shock proteins in the regulation of skeletal muscle mass during, and following, cast immobilization. **Southeast Chapter of the American College of Sports Medicine, Greenville, SC**, February 2010. *Symposium*

Heat shock proteins and skeletal muscle atrophy, Department of Physiology, **University of Kentucky**, Fall 2009. *Invited talk*

Exercise & Peripheral Arterial Disease, Department of Physical Therapy, University of Florida, Fall 2009. *Invited talk*

OutFOXOing muscle atrophy: The role of Hsp70, Department of Applied Physiology & Kinesiology, University of Florida, Fall 2009

Transcriptional regulation of muscle mass, Department of Physiology & Functional Genomics, University of Florida, Fall 2009. *Invited talk*

Heat shock proteins: Regulators of cell signaling and skeletal muscle atrophy. **Beth Israel Deaconess Medical Center/Harvard Medical School, Boston**. Spring 2009. *Invited talk*

Heat shock proteins as signaling molecules. Department of Neuroscience, University of Florida, Spring 2009. *Invited talk*

Heat shock proteins and muscle atrophy. Advances in Skeletal Muscle Biology in Health and Disease Biennial Conference, University of Florida, Spring 2009. *Invited talk*

Heat shock proteins as signaling molecules in skeletal muscle during disuse and aging. The Interdisciplinary Research Seminar Series, College of Medicine, University of Florida, Fall 2008. *Invited talk*

Oxidative damage in the skeletal muscle of peripheral arterial disease patients. Advances in Skeletal Muscle Biology in Health and Disease Biennial Conference, University of Florida, Spring 2007. *Invited talk*

NF- $\kappa$ B signaling in disuse muscle atrophy. Department of Applied Physiology and Kinesiology, University of Florida, Spring 2007. *Invited talk*

NF- $\kappa$ B signaling in disuse muscle atrophy. Department of Exercise Science Seminar, **University of Massachusetts**, Fall 2006. *Invited talk*

Oxidative damage to skeletal muscle following exercise-induced claudication. Department of Exercise Science Seminar, **University of Massachusetts**, Fall 2003. *Invited talk*

Exercise and ischemia-reperfusion injury in skeletal muscle. Center for Exercise Science Seminar, University of Florida, Fall 2002. *Invited talk*

## **B. INSTRUCTION**

### **COURSE TEACHING AT UNIVERSITY OF FLORIDA**

#### **Graduate Level**

Seminar in Rehabilitation Sciences,  
Exercise Physiology,

PHT6935, Fall 2011,  
PHT6152, Doctorate of Physical Therapy, Spring 2010-  
present

Physiology of Exercise Training,  
Muscle Plasticity Journal Club

PET6255C, Fall 2003,  
PET6935, Fall 2014; Spring 2016, Fall 2016, Spring 2017

#### **Undergraduate Level**

Applied Human Physiology,  
Applied Human Physiology,  
Applied Human Physiology,  
Physiology of Exercise Training,  
Neuromuscular Physiology,

APK2105C, Spring 2007,  
PET2350C, Summer 2004,  
PET2350C, Spring 2004,  
PET3351C, Spring 2004,  
PET4381, Fall 2003,

### **OTHER TEACHING ACTIVITIES AT UNIVERSITY OF FLORIDA**

Advanced Research,  
Doctoral Research,  
Senior Honors Thesis,  
Individual Work,  
Advanced Research,  
Senior Honors Thesis,  
Advanced Research,  
Senior Honors Thesis,  
Senior Honors Thesis,

RSD7979, Fall 2011;  
RSD7980, Fall 2011;  
HSC4970, Fall 2011,  
RSD6905, Fall 2011;  
RSD7979, Spring 2011;  
HSC4970, Spring 2011,  
RSD7979, Fall 2010;  
HSC4970, Fall 2010,  
HSC4970, Summer 2010,

## **MENTORING**

### **Current PhD Students**

*Rachel Nosacka*, BS

Rachel is in the Interdisciplinary Program in Biomedical Sciences with a concentration in Cancer Biology. She joined my lab in April 2015 and in August 2015 was awarded a TL1 Predoctoral Fellowship from the University of Florida Clinical and Translational Science Institute. Rachel is studying the morphological and ultrastructural adaptations of skeletal muscle in cachectic pancreatic cancer patients and their mouse avatars.

#### **Previous Postdoctoral Fellows**

***Dan Ryder***, PhD University of Texas

Dan completed his PhD in Biochemistry and Molecular Biology at the University of Texas in 2009. He completed a two-year post-doc in my lab from 2012-2014, and is currently working for Thomas Reuters in Boston, MA.

***Sarah Senf***, PhD University of Florida

Sarah conducted her PhD in Exercise Physiology in my lab from 2007-2012 and then her post-doc in my lab from 2012-2015. She is now Adjunct Faculty in the Department of Physical Therapy at the University of Florida.

***Sarah Reed***, PhD University of Florida

Sarah completed her PhD with Dr. Sally Johnson in Animal Sciences and joined the lab in August 2009. She worked on developing our experimental models of sepsis and cancer cachexia and determined the requirement of FoxO activation for muscle atrophy during these conditions. Sarah left the lab for a position as a tenure track Assistant Professor at the University of Connecticut.

#### **Previous PhD Students:**

***Brandon Roberts***, PhD University of Florida

Brandon conducted his PhD in the Rehabilitation Sciences Doctoral program from 2012-2016. He is currently a post-doc in Dr. Marcos Bamman's lab at the University of Alabama Birmingham.

***Adam Beharry***, PhD University of Florida

Adam conducted his PhD in Rehabilitation Sciences in my lab from 2011-2015. He is currently an Athlete Biological Passport Manager at the United States Anti-Doping Agency (USADA).

***Sarah Senf***, PhD University of Florida

Sarah conducted her PhD in Exercise Physiology in my lab from 2007-2012. She is currently adjunct faculty in the Department of Physical Therapy at the University of Florida.

#### **Current Undergraduate Students:**

***Meghan Murphy***, B.S. Health Science Honors Student, 2016-2017

Meghan is assisting with our projects on the role of the protein Myocilin in the regulation of skeletal muscle health in tumor bearing hosts.

***Jonathan Heaven***, B.S. Health Science Honors Student, 2016-2017

Meghan is assisting with our projects on the role of the protein Kyphoscoliosis Peptidase in the regulation of skeletal muscle health in tumor bearing hosts.

#### **Previous Undergraduate Students:**

***Uttsav Sandesara***, B.S. Health Science Honors Student, 2013-2014

Uttav assisted with our projects on heat shock protein 70 and skeletal muscle plasticity. He is currently applying to the Medical School.

**Travis Howard**, B.S. Health Science Honors Student, 2011-2012,  
Travis assisted with our projects on heat shock protein 70 and skeletal muscle plasticity. He is entering Medical School Fall 2012 at Georgetown

**Jaina Morar**, B.S. Health Science Honors Student, 2010-2011  
Jaina's project focused on the role of heat shock proteins in regulating nuclear factor  $\kappa$ B in skeletal muscle cells. Jaina is currently in the Physician's Assistant Program at Yale University

**Brittany Gagnon**, B.S. Exercise Physiology, Spring 2009  
Brittany collected data on the role of oxidants as upstream activators of nuclear factor  $\kappa$ B and Forkhead BoxO during muscle disuse. She gained authorship on the resulting manuscript published in Muscle & Nerve. Brittany is currently in the Physician's Assistant Program at the University of Florida.

**Ph.D. Committee Member**

Bayli DiVita (Current Student), Immunology & Microbiology, University of Florida  
Philip Coblenz (Current Student), Applied Physiology, University of Florida  
Lance Riley (Current Student), Physiology & Pharmacology, University of Florida  
James Thomas (Current Student), Genetics, University of Florida  
Bumsoo Ahn (Graduated Spring 2014), Exercise Physiology, University of Florida  
Erin Talbert ((Graduated Spring, 2013) Exercise Physiology, University of Florida  
Eliza Rothi-Gonzalez (Graduated Spring, 2013), Rehabilitation Sciences, University of Florida  
Luther Gill (Graduated Fall, 2012), Rehabilitation Sciences, University of Florida

**Masters Committee Member:**

Brandon Roberts M.S. Human Performance, (Graduated Spring 2012), University of Florida  
Anoop Balchandran, M.S. Human Performance, (Graduated Fall, 2007), University of Florida  
Om Prakash, M.S. Human Performance, (Graduated Spring, 2007), University of Florida  
Rupa Nair, M.S. Human Performance, (Graduated Spring, 2007), University of Florida

**STUDENT AWARDS**

Rachel Nosacka, 2016, Outstanding Research Presentation, International Cancer Cachexia Conference, Washington DC

Jonathan Heaven, 2016-2017 University Scholars Program Award, University of Florida

Meghan Murphy, 2016-2017 University Scholars Program Award, University of Florida

Rachel Nosacka, 2016, Outstanding Pre-Doc Poster Award, Neuromuscular Plasticity Symposium, University of Florida

Sarah Senf, 2015, Outstanding Post-Doc Poster Award, Neuromuscular Plasticity Symposium, University of Florida

Uttav Sandesara, 2014, Undergraduate Dean's Scholar Award

Adam Beharry, 2014, Top 8 Abstract (\$300 travel award), College of Public Health & Health Professions Research Day



Brandon Roberts, 2014, Top 15 Abstract (\$300 travel award), College of Public Health & Health Professions Research Day

Dan Ryder, 2013, Outstanding Post-Doc Poster Award, Neuromuscular Plasticity Symposium, University of Florida

Dan Ryder, 2013, Runner-up, Best poster, Post-doctoral research day, University of Florida

Brandon Roberts, 2013, Highest Ranking Abstract (\$1,000 travel award), College of Public Health & Health Professions Research Day

Sarah Senf, 2012, Best Poster Award, Sixth International Symposium on Heat Shock Proteins in Biology and Medicine, Alexandria, Virginia

Brandon Roberts, Graduate School Fellowship, 2012-2016  
Travis Howard, 2012, Undergraduate Dean's Scholar Award

Travis Howard, 2012, Undergraduate Dean's Scholar Award

Travis Howard, 2012, Outstanding Undergraduate Research Award, College of Public Health & Health Professions Research Day

Adam Beharry, 2012, Outstanding Graduate Student Poster Award, Neuromuscular Plasticity Symposium, University of Florida

Sarah Senf, 2011, Best Contribution Award, International Conference on Muscle Wasting, Ascona, Switzerland

Adam Beharry, National Institute of Health, T32 Fellowship, Interdisciplinary Training in Rehabilitation and Neuromuscular Plasticity Program, University of Florida, August 2011-Present

Sarah Senf, 2011, Outstanding Graduate Student Poster Award, Neuromuscular Plasticity Symposium, University of Florida

Sarah Reed, 2011, Outstanding Post-Doc Poster Award, Neuromuscular Plasticity Symposium, University of Florida

Sarah Reed, 2011, Outstanding Post-Doc Poster Award, College of Public Health & Health Professions Research Day

Travis Howard, 2011, College of Public Health and Health Professions University Scholar Award

Jaina Morar, 2011, Undergraduate Dean's Scholar Award

Jaina Morar, 2011, Outstanding Undergraduate Research Award, College of Public Health & Health Professions Research Day

Sarah Senf, National Institute of Health, T32 Fellowship, Interdisciplinary Training in Rehabilitation and Neuromuscular Plasticity Program, University of Florida, August 2008-April 2012

**C. SERVICE****Grant Review**

2008	US Army Research Office, Division of Life Sciences, Reviewer, August
2009	NASA/NSBRI Skeletal Muscle/Cardiovascular Physiology study section, February, ad hoc,
2009	AFM Telethon, Reviewer, January
2011	NSBRI Postdoctoral Fellowship Applications study section, August
2012	NIH, SMEP study section, February, ad hoc
2012	NIH, Special Emphasis Panel/Scientific Review Group, ZRG1 MOSS-Q (14) B study section, November
2013	NIH, Special Emphasis Panel/Scientific Review Group ZRG1 MOSS-C (03) S, July
2013	NIH, Special Emphasis Panel/Scientific Review Group, ZRG1 MOSS-Q (14) B study section, November
2013	NIH, Special Emphasis Panel/Scientific Review Group ZCA1 SRLB-C (J1) R - Provocative Questions: Cancer Therapy & Outcomes study section, November
2014	AFM Telethon, Molecular & Physiopathological Basis of Other NM Diseases reviewer, January
2014	NIH, SMEP study section, June, ad hoc
2014	NIH, SMEP study section, October, ad hoc
2015	NIH, "Aging and Neuromuscular Junctions" Review Committee
2015	NIH, ZRG1 MOSS-V(03) Special Emphasis Panel on Skeletal Muscle Physiology
2015	NIH, NCI Special Emphasis Panel/Scientific Review Group 2016/01 ZCA1 RPRB-C (J1) P meeting
2016	NIH, ZRG1 MOSS-V(03) Special Emphasis Panel on Skeletal Muscle Physiology
2016	NIH, SMEP study section, June, ad hoc
2016-2017	VA, CAMM study section, ad hoc

**Editorial Advisory Board**

2016- American Journal of Physiology: Cell Physiology

**Journal Peer Reviewer**

*Acta Physiologica*

*Age and Ageing*

*American Journal of Physiology: Cell Physiology*

*American Journal of Physiology: Endocrinology and Metabolism*

*American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*

*European Journal of Applied Physiology*

*European Journal of Cancer*

*The FASEB J*

*International Journal of Biochemistry and Cell Biology*

*Journal of Anatomy*

*Journal of Applied Physiology*

*Journal of Experimental Zoology Part A: Comparative Experimental Biology*

*Medicine & Science in Sport & Exercise*

*Pflügers Archiv European Journal of Physiology*

*PLoS ONE*

**ACADEMIC COMMITTEES AND SERVICE**

2012, 2014, 2016, 2017 International Conference on Advances in Skeletal Muscle Biology in Health and Disease, Scientific Organizing Committee  
2016 Member, Search Committee for Research Assistant Professor  
2014 Member, Search Committee for Research Assistant Professor  
2011- Neuromuscular Plasticity Symposium, Organizing Committee  
2010- Rehabilitation Sciences Doctorate Committee  
2010- Rehabilitation Research Seminar co-Chair  
2010- Myology Institute Seminar co-Chair  
2011 Member, Search Committee for Research Assistant Professor  
2009- Abstract Review for PPHP Research Day

**MEMBERSHIP IN PROFESSIONAL AND SCIENTIFIC SOCIETIES**

American Physiological Society  
Cell Stress Society International  
Society for Muscle Biology  
Society on Sarcopenia , Cachexia and Wasting Disorders  
Southeastern American College of Sports Medicine